A COMMUNITY APPROACH TO BIOSECURITY IN A REMOTE AUSTRALIAN REGION

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Abstract

'How do communities engage with new knowledge?' This is the research question posed by a PhD student based in an irrigable agricultural community, grappling with concepts of community engagement and participation in biosecurity[3].

Every community is different and as such, relies on unique and distinct methods to transfer information across all areas of its population. Local residents and organisations within these communities can access new knowledge through fairly traditional and predictable mediums such as brochures, detailed reports, the internet, newspaper articles and the radio, while others prefer a more personal means of exchange. Because of the size, diversity and transience of its population, local people living within this northern Australian community depend more on their social networks and personal relationships to provide trusted and reliable sources of information. As a result, this research project will explore the key concepts that connect both Indigenous and non-Indigenous people and the manner in which shared ideas, knowledge, experience, energy, cultural beliefs and traditions build the capacity of individuals, groups and the community to address local issues. Initial research results provide a detailed description of how new knowledge is (or is not) exchanged across different community sectors in order to learn from one another and instigate change.

Introduction

In 2005, Charles Darwin University teamed with a primary industries association from an irrigable agricultural community to receive funding from the Cooperative Research Centre for National Plant Biosecurity to support a doctorial study on 'Biosecurity through Community Engagement'. The project commenced in February 2006 and aims to determine the most effective manner in which local people living in and visiting the community learn, exchange information and take up new knowledge using the principles of community engagement.

This article will provide a brief overview of the preliminary findings and emerging themes from this research with a particular focus on the way in which information and new knowledge is gathered and shared within six different sub-groups in the town. These include people associated with primary industry, government departments, Indigenous groups, tourism as well as young people and other local residents. The project will also

3 Biosecurity refers to those strategies and actions that reduce the risk of a biological incursion (insects, disease and/or vegetation) impacting on a specific area at a local, regional, state or national level.

apply the theoretical concepts of community engagement and learning communities to support these findings together with a detailed review of literature in the areas of community, social capital, informal learning and communities of practice. Conversations, observations, interviews and community participation will provide a particular insight into how local people engage new knowledge through their involvement in local activities, relationships and the capacity to work independently or together to achieve a common goal.

The town on which this research is based is located in the north-eastern corner of Western Australia and has a diverse population of some 6,000 people[4], 35% of which identify as Indigenous[5] (Taylor, 2003). Though the area is remote (in terms of it's proximity to the state's capital city of Perth), the area maintains several local industries (agricultural, government, Indigenous, mining, service and tourism) that provide significant employment opportunities in a range of different skilled and unskilled areas. There are three distinct climatic seasons including the dry[6], the build up[7] and the wet[8], which greatly influences the level of tourist and agricultural activity. As a result, the town has a transient population with some industries specifically relying on a short-term work force in the dry season (fruit picking, tree planting and hospitality) while others have a high turnover of staff as employees gain short term[9] experience in an isolated area that may elevate future career prospects (teachers, police officers or other government employees).

Though the town supports a transient population, it also maintains a strong sense of community, which is typified by the establishment of close relationships between individuals and groups, participation in neighbourhood activities and the communal attitudes of reciprocity[10], partnership and collective action[11]. As such, local people have immediate access to information, particularly through their social networks, though many are selective as to where they source new knowledge and the credibility they deem it to have. More importantly however, information needs to be of interest or relevant to the livelihood or lifestyle of local people before it is taken up and interpreted as new knowledge, which is particularly relevant in the area of biosecurity.

Even though there are significant resources and information available about biosecurity, local people tend to show minimal interest in the surveillance and reporting of biological threats in the region. This is especially evident when comparing the strong participation of local people in programmes to eradicate cane toads (*bufo marinus*) as an

[4] This number doubles in the (dry) tourist season
[5] This figure is expected to be higher as Indigenous people relocate to the town from outlying communities during the wet season while many (transient) others are not recorded by traditional (government) forms of data/statistical collection.
[6] April to September – warm days, cool nights and no rainfall (tourist and primary growing season)
[7] October and November – very hot, humid conditions with the possibility of rainfall
[8] December to March – warm temperatures with tropical/monsoonal rainfall
[9] Two years is the common length for a posting
[10] In this setting, reciprocity refers to an informal though mutually beneficial exchange of positive actions that can bring about increased levels of public good and social cohesion.
[11] High community participation in local initiatives such as sporting groups, volunteer fire brigades, school committees, environmental organisations and social events.

environmental strategy, compared with weak participation in those proactive measures intended to reduce the risk of other biological incursions in the immediate and broader agricultural district. Though there have been a number of biosecurity strategies in place over a period of time, the local region has encountered regular biological incursions (of differing levels of seriousness) over the past ten years; the last being in late 2007.

Literature Review

This project focuses on the theoretical positions of community engagement and learning communities to determine the most appropriate means to connect and activate a small but very diverse population. In doing so, attention will concentrate on the critical concepts of community, social capital, informal learning and communities of practice.

Assigning a definitive meaning to community can be somewhat challenging as the concept is broadly used by many individuals and institutions in a range of different contexts (CDCP, 1997; DSE, 2006; Hashagen, 2002; Ife, 2002; Mistry, 2007). In its most uncomplicated form, community refers to a group of people who share a common identity or interest, whether it be a geographic location, cultural background, occupation, sport, language, age, school or sexuality (de Beer and Sewanepoel, 1998; Henderson & Thomas, 2002; Hooper, 2006; Howarth, 2001; Ife, 2002; Kenny, 1999; Muirhead, 2002). However, community is much broader than a simple collective of people and relates more to the interactions and connectedness that occurs between individuals and groups. It can also be a space where people establish relationships and social networks based on their shared interests, experiences and relations (Kenny, 1999) and develop a specific sense of belonging, value, identity and acceptance by others (Ife, 2002; Muirhead, 2002; Wills, 2001). Community also refers to the ability of its members to have any number of individual and collective needs met through its local resources (Kenny, 1999; Muirhead, 2002). Parisi, Grice, Taquino and Gill (2002) recognise that the effectiveness of a community to meet these needs is central to its ability to maintain and enhance the wellbeing of a local population. However, all communities are not homogenous and can only address local issues with the specific social resources (or social capital) available (Brough *et al*., 2006; Ife, 2002; Kilpatrick & Abbott-Chapman, 2005; Parisi *et al.*, 2002).

There are many different views of what social capital is and what it does (Kilpatrick & Abbott-Chapman, 2005). The OECD recognises it to be those “networks, together with shared norms, values and understandings, which facilitate cooperation within or among groups" (cited in Edwards, 2004, p.5). Though there is some debate over its definition, many agree that the essence of social capital is based on quality social connections that bring mutual relationships of trust, reciprocity and cooperation (Cuthill, 1999; Edwards, 2004; Fukuyama, 1999; Henderson & Thomas, 2002; Kilpatrick & Abbott-Chapman, 2005; Productivity Commission, 2003; Stone & Hughes, 2002). These strong social networks therefore provide greater opportunities for individuals and communities to access and utilise local resources to achieve a varying degree of specific, collective and mutually beneficial goals (Bregendahl & Flora, 2002; Fukuyama, 1999; Kilpatrick & Abbott-Chapman, 2005; Schuller, 2001; Stone & Hughes, 2002). Such an approach complements the idea of learning communities whereby groups of people, linked through

common location or shared interest, collaborate and work together to address the learning needs of their members (Kilpatrick *et al*., 2003).

With access to greater skills, knowledge and experience, learning communities enable new partnerships to be established that increase the capacity of the community to shape and manage its own future while promoting community regeneration, social cohesion and social, cultural and economic development (Kilpatrick *et al*., 2003; Kretzmann & McKnight, 1993). There are distinct parallels between learning communities and Wenger's concept of Communities of Practice (1998), in that individuals have the opportunity to grow and learn from their social interaction with others and "engage in a process of collective learning in a shared domain of human endeavour" (Wenger, 2006, p.1). Communities of practice therefore develop around issues or activities that are important to local people, and result in practice and engagement reflecting what is real and important to its members (Wenger, 1998).

These perspectives of community, social capital and learning communities are central to the concept of community engagement, which can be described as a process of working with groups of people who are linked by geographic proximity, special interest or similar circumstance to address issues affecting their specific and communal well-being (CDCP, 1997; DSE, 2006; Hashagen, 2002; Mistry, 2007). They also recognise that local populations are diverse, which promotes the establishment of unique partnerships that encourage an open exchange of information and differing points of view. As a result, community engagement can present opportunities to establish various and new relationships between local people, groups and organisations that in turn, provide a platform for increased community learning, improved access to private and public resources and instigate change in policy, programmes and practice to achieve common goals (CDCP, 1997; DSE, 2006; Hashagen, 2002; iPlan, 2004; Tamarack, 2003). It is these views of community, social capital, learning communities and community engagement that provide the theoretical framework for this study.

Methods

This project is expected to conclude in early 2009 and as such, this paper will report on the progress of preliminary research findings rather than an overview of the larger study. Qualitative research will form the overall methodological basis for this project however, as a collective case study (Stake, 2005), initial attention has so far focused on the experiential knowledge of six sub-groups within the community and the social, cultural, political and economic factors (CDCP, 1997) that influence the manner in which individuals from within these groups gather and share new knowledge.

As a result, the initial data collection process has adopted a bricoleur approach (Stake, 2005) whereby a number of different methodologies have been considered to determine the most effective learning styles amongst people in the community, particularly those associated with primary industry, Indigenous groups, tourism, government departments as well as young people and other local residents. For example, interviews with Indigenous adults and Indigenous young people occurred in an outdoor, group setting involving food, general discussion and the support of an interpreter rather than the more

purposive style of interview that was used with government officers, primary producers, local residents and tour operators.

This paper will therefore draw on the data collected during the initial thirty one interviews of this project as well as some of the notable points to come from eighteen months of community observation, conversation and participation.

Phase 1 – Community Mapping and Literature Review
A community mapping exercise has been undertaken to describe and identify the local human and material resources, in particular the local people (socio-economic, demographical, cultural and ethnic characteristics), location (geographic boundaries), social connectors (shared values, interests, motivating forces) and power relationships (communication patterns, formal and informal lines of authority and influence, stakeholder relationships and resource flows) (CDCP, 1997). Much of this has been done through the observation, conversation and participation in community activities, groups, organisations and neighbourhoods.

Literature relating to community engagement and learning communities has provided a clear contextual and theoretical framework for this study. The combination of a mapping exercise and a literature review has been used to inform the direction and design of the project and triangulate data collected in phase two of the project.

Phase 2 – Data Collection
Data has been collected over an eighteen month period using interviews, observations, conversations, community participation and a review of relevant documents, reports and journals. Input and feedback from local people has been central to this project and reflects a range of effective models of learning and knowledge transfer across the community.

A minimum of forty five interviews will be held with up to ten representatives from each of the six specific sub-groups. To date, thirty one interviews have been completed with forty five people (across all target groups), which has provided detailed information about the social networks and effective learning techniques within each. This information will form the main basis of the project data.

Interviews with local residents and young people as well as those associated with primary industry, government agencies and tourism have been undertaken on an individual basis while discussions with Indigenous artists and Indigenous young people have been in a group setting. A further fourteen interviews have been scheduled with local school students (of varying ages), local Indigenous women, teachers, primary industry, backpackers and tourists (at caravan parks).

Phase 3 – Data Analysis
Data gathered collected from interviews, observations, conversations and community participation has been analysed during the data collection phase. Conversational analysis has been an important tool during this research with audio recordings (of interviews) allowing for a detailed qualitative description of the social interactions, structures and practices that exist within the local community (Perakyla, 2005). Once the data collection

process is complete, nVivo software will be used to ensure all key themes are identified in order to determine the most effective manner in which different groups in the community take up new knowledge and share information.

Though there is no definitive conclusion to draw from the analysis as yet, the data collected over the past eighteen months suggests three emerging themes that impact greatly on the manner in which information and knowledge is transferred across the broader community.

Results and Discussion

In order to arrive at the preliminary results in this report, a thematic analysis (Aronson, 1994; Boyatzis, 1998) was undertaken using techniques suggested by Perakyla (2005) and Silverman (2001). As such, data has been collected and analysed over the past eighteen months using active observation, conversation, interviews and participation in community activities, events, organisations and neighbourhoods.

Thirty one interviews have been completed out of an expected total of forty five. Eight have been with local residents, seven from tourism[12], six from primary industry, five with Indigenous people[13], four government officers and one young person[14]. Those interviewed all have varied family and personal backgrounds, have lived in the town for mixed periods of time and maintain diverse professions and roles in the community. While there are some similarities across all six sub-groups, there are very few variations in the data collected from local residents, primary producers and government officers.

Of those non-Indigenous people interviewed, only one (young person) has lived in the area since infancy though was absent for the final three years of schooling. This indicates, together with data collected through observation and conversation, that the vast majority of local non-Indigenous residents have come into the town from other communities, many as individuals or single family units as opposed to extended family groups. Alternatively, almost all Indigenous people interviewed were born in the town and have lived in the community ever since. Two young people were born in a neighbouring town but all have vast family networks in the area and maintain significant cultural ties to the region.

While many non-Indigenous people come to the area to take advantage of work opportunities in local agricultural, mining, tourism, government and service industries, many choose to stay longer in the area because of the unique lifestyle they can lead. A warm climate year-round, regular employment, an abundance of water, quality fishing, picturesque landscapes, peaceful settings and good camping are a number of reasons why people remain in the region longer than originally anticipated. However, for Miriuwung

[12] Including five tour providers and two tourists
[13] Including two individual interviews, one group interview with six Indigenous artists/art workers and two groups of Indigenous young males
[14] Though data collected from interviews with two groups of Indigenous young males is relevant to the sub-group relating to young people

people[15], living in the community is not a choice based on lifestyle comforts but more because of the strong connection to cultural protocols, spiritual beliefs and traditional laws, which generates a deeply ingrained sense of 'belonging to country' (or attachment to the land) (Jacob, 1991). This has been clearly demonstrated by the high respect assigned to elders from within the local Indigenous community (and some aspects of the non-Indigenous community), recognition of local protocols as well as the continuous relationship with traditional stories, laws, beliefs and culture that have existed in the region for up to 50,000 years[16] (Jacob, 1991). As a result, Indigenous people are quite notably the most stable and least transient population group in the community.

The preliminary data collected during the initial eighteen months of this project has provided a significant amount of information. Below are the three main themes to emerge from this study thus far.

The Importance of Social Networks

One of the first and most notable themes to come from the study is the important role that social networks play in the lives of local people. Even with a fluid population, one of the more obvious conclusions to draw from the data is the existence of an overwhelming sense of community. Local people acknowledge the area to be close knit and welcoming, which allows social networks to develop around a number of different common connectors. The workplace provides a focal point for people to meet as do recreational activities, community groups, family gatherings and children's interests (schools, sports and child care). However, even though these settings bring people together, there are a number of other specific personal characteristics that enable individuals to develop close and bonding ties with one another. For example, people tend to form friendships because they have like-minded social, moral or ethical attitudes, similar life experiences, family relations, comparable ages or longevity in the town or a similar interest in sports or outdoor activities such as fishing, camping, boating or four wheel driving. For non-Indigenous people who originate from other localities, these friendships offer the close bonded relationships that they would otherwise get from immediate family members if they remained in their original community. They recognise that these close ties and friendships are not only essential for an individual's social and mental sustainability, they also bring about much broader feelings of reciprocity, cooperation and trust throughout the town.

<u>Information exchange and alcohol consumption</u>

One of the key features of the community, (particularly but not exclusively amongst non-Indigenous men within local service, tourism, mining and primary industries) is the close link between social gatherings (and therefore the informal and formal exchange of information) and the consumption of alcohol. One local organisation (though there are bound to be others) maintains an open policy whereby any customer entering their premises after 4pm is to be offered a beer. Customers and staff recognise this to not only be an appropriate way to relax at the end of the working day, but also as a highly valued

[15] The traditional owners of the land
[16] and according to local elders

opportunity to informally build relationships and find out the latest news within their industry and the town.

Similarly, several residents recognise that much of their networking and information exchange occurs at the public bar or at industry meetings held in the late afternoon or evening whereby alcohol consumption is considered to be an essential aspect of a gathering. One resident said he would not attend morning meetings primarily because they "only served tea" (pers. comm., 2007) while another commented on regularly attending industry lunches that conclude when the public bar closes for the evening. One particular grower is said to have 'missed out' on so much information because he didn't consume alcohol and therefore did not maintain the same social networks as others in the agricultural industry. Input from local women does not indicate the same distinct link to work-related alcohol consumption, but still recognise that 'catching up for a few drinks' or 'a night out with the girls' to be an important aspect of living in the community, maintaining strong social networks and gathering new knowledge.

Community and social capital

Many residents believe the close sense of community, together with the town's remote location and an enduring 'last frontier' mentality, strengthens an underlying philosophy of pooling local resources to 'get the job done'. Many people volunteer their time and skills along with physical and financial capital to any number of sporting groups and/or community organisations while also participating in local activities such as the agricultural show, concerts, festivals, street parties, public forums and sporting events. These activities have far reaching social, cultural, political and financial benefits (CDCP, 1997; Hashagen, 2002) and reinforce the idea that local people are just as likely to 'help out' or 'give something back to the community' as they are to simply attend functions for their own enjoyment, satisfaction or personal gain. Kilpatrick and Abbott-Chapman (2005) recognise that the quality of social interaction between local members is pivotal in developing social capital, which in turn, increases the likelihood of positive communal outcomes and social change being achieved within rural and remote populations. There is evidence to suggest that these same qualities exist within this community and that social capital, it is assumed, will be relevant in this study (though such an assumption will be further tested as the research progresses).

Interesting to note however, that even though there are many examples of social connection within the community, there still exists a distinct level of division between Indigenous and non-Indigenous people, particularly towards Indigenous people living on the site of the original Indigenous reserve[17]. Even with recent rulings by the National Native Title Tribunal (NNTT, 2006) recognising the existence of Indigenous tenure of local lands[18] and the formation of the Ord Enhancement Scheme (a partnership agreement between Yawoorroong Miriuwung Gajerrong Yirrgeb Noong Dawang

[17] A community reserve was established by the state government on the outskirts of the town to house Indigenous people in the late 1960's. This reserve was significantly under resourced and was returned to Indigenous people in the 1980's.

[18] Native Title acknowledges that specific Indigenous groups maintained traditional links to certain lands and water before European settlement and provides opportunities for compensation, access and/or ownership

Aboriginal Corporation[19] and the WA state government) (MG Corporation, 2008), recognition of Indigenous people and Indigenous organisations is still not considered significant by an obvious number of non-Indigenous people, particularly when referring to local knowledge and systems of learning. A reason for this may lie in the region's colonial past whereby traditional lands were acquired by non-Indigenous people and their associated industries (mining, agriculture and tourism) without consultation, recognition or compensation to local Miriuwung people (Powell, 1998).

Though this disparity is most notable in the relationships between Indigenous[20] and non-Indigenous people in general, there are examples of distinct intentional and unintentional division amongst other sub-groups whereby people primarily (but not always) source and share knowledge and information from within their own peer groups and networks. Tourists link up with other tourists, government workers with other government workers, growers with growers, young people with other young people and so on.

Accessing Information

A second notable theme, particularly with reference to social capital, is the way in which local people exchange information and acquire new knowledge (Kilpatrick and Abbott-Chapman, 2005). For many, close personal relationships and networks enable information to be transferred most effectively by word of mouth. For Indigenous people[21], this is especially central to the transfer of traditional knowledge, protocols, laws, customs and beliefs within the community. According to one elderly artist at the local Indigenous art centre, all of the knowledge she carries is put on to a canvas as a record of the contemporary and traditional stories from the region. A young arts worker provided an interpretation of why oral and visual story telling is significant amongst local Indigenous people:

> "It's almost like going to school… it is a stepping point. People go to uni and step up (in society) when they graduate. These guys have to step up to become the next elders and have to know all these things before they can become or be recognised as an elder. And that is very important. It's just like getting a degree" (pers. comm., 2008).

Though somewhat different by comparison, non-Indigenous groups also depend heavily on personal contacts and conversations to access information. For example, tourists are reliant on information provided by tour operators and other travellers so as to enhance the quality of their holiday experience. In particular, discussions are regularly held in informal settings in caravan parks and backpackers about the prospect of short-term work opportunities, scenic sites to visit, the best accommodation houses to stay at, the cheapest restaurants and bars to attend or the road conditions between one town and the next. Similarly, work colleagues and associates gather on a Friday afternoon for a beer to discuss the latest issues in their specific industry, while local young people learn from one another as to where to catch the best barramundi[22].

[19] Miriuwung Gajerrong Corporation or MG Corp.
[20] From the reserve
[21] Particularly those living on the site of the original reserve
[22] A popular recreational estuarine fish found in the northern parts of Australia

Making information credible

Though word of mouth is relied upon heavily to share local information, not all material however, is as openly accepted with the same degree of credibility. For example, local people are relatively conscious of who they source and accept information from and tend to be more reliant on those they have existing relationships with or others with some recognised level of 'street credibility' in the town. Shire employees, elected members (local, state and commonwealth), business owners, government officers and/or long term residents may hold specific and/or influential roles in the town, but may not necessarily be viewed with any great level of confidence by local people. Apparently, position alone does not automatically mean that the provision of information (whether it be factual or opinion) has any more influence than that provided by others. Certainly, those who have a proven 'track record' or actively contribute to the betterment of the community (either because of personal conviction or professional position) are viewed favourably and assumed to hold levels of influence. Others who appear to be vocal but relatively inactive or (perceived to be) motivated by self interest, are not offered the same level of respect.

Government departments as sources of information

Though many assume that government departments have significant resources at their disposal, it appears that local people from all groups (other than those working in government departments or connect with them as part of their employment) do not recognise them as being a significant source of knowledge and expertise. It seems that these agencies are seen more on the periphery with few local people actively seeking new information on issues such as models of best practice, potential funding opportunities, research and development or the latest in technology. Government departments are far more likely to try and access local people (rather than local people access government departments) by providing generic information on specific government activities and programmes through the distribution of pamphlets, reports, journals and media releases.

However, local people seem to be more likely to source information from individuals they trust rather than rely on more formal means of information exchange. For instance, local growers tend to contact other local growers to discuss issues such as crop types or best farming practice rather than perhaps the local department of agriculture. This is not necessarily because there is distrust of government agencies (though certain actions by some departments may affect this) but rather a lack of relationship with the organisation and those working within it. For many, government departments are only contacted within relatively formal structures when there is a specific regulatory or legislative need to be fulfilled. For example, a local supplier reported to only contact the department of agricultural when his latest shipment of seed needed to pass through quarantine.

There are exceptions to this however. There are some government employees who are specifically and purposely contacted by local people because they have developed close relationships outside their work environment. In these cases, individuals are not only recognised for having some level of competence but also because their social networks extend beyond a professional setting. This is particularly demonstrated by the senior sergeant at the local police station who makes a deliberate effort to walk around the town (in uniform) whenever possible to provide opportunities to meet and establish new or

different relationships with local people. Similarly, newly arrived police officers and teachers tend to join local sporting groups or attend significant sporting events in order to establish informal relationships with other community members, especially local Indigenous families. In other cases, those government employees, who are also long term residents with established networks in the community, are specifically targeted by local people when information is sought from their respective government departments.

The benefits of personal contacts and communication

Local people from all groups recognise that establishing and maintaining personal contact with a range of different social and professional networks to be critical to the success of their current employment and livelihood. One long term resident recognised that her ability to be effective in the work place[23] can be directly attributed to her capacity to generate and gain local support, interest and participation in issues relevant to her role as a government employee and the broader community. For her, it is about "face to face community contact rather that sitting in an office, sending emails and mailing out pamphlets. There's not much joy in having a conversation with a brochure" (pers. comm., 2007).

Another local resident recognised that a number of people have the capacity to engage with others and instigate change. In her view, these people have:

> "the ability to draw people in, talk to them and make them aware (of community issues) and get their support. Doesn't matter what it is… you can do anything if you get out and talk to people. It's all about education. Once you explain what it is you want to do, why you are doing it, how you are going to do it, who else is doing it, then it becomes a personal thing. Others get involved because you have spoken to them personally" (pers. comm., 2007).

Information Connected with People's Area of Interest

The third theme to emerge from this research is the distinct link between an individual's motivation to engage new knowledge or information and their personal interest in an issue (or the potential for an issue to have an impact on their livelihood or lifestyle). Local people are provided with significant amounts of public information through pamphlets, community noticeboards, mail deliveries, displays, local, state and national newspapers, community forums, government publications, radio, television as well as the internet.

However, there is an assumption (particularly amongst government departments) that because material is made publicly available, local people will take up information on their own accord and retain it as new knowledge. Evidence would otherwise suggest that most people undertake a very brief assessment of such material (a quick flick through) and discard it if it does not contain any points of interest. Though information produced by local organisations seems to gain greater attention than government departments, a significant amount is still being produced without any analysis of the effectiveness of distributing such material. A number of people have commented that "if something was

[23] In terms of outcomes achieved

really that important, then someone will tell them about it… eventually" (pers. comm., 2007).

Knowledge and biosecurity

The effectiveness of the current (more formal) approach to providing information to the community is particularly evident in the area of biosecurity. At present, the local agricultural region maintains Area Freedom status[24], which is vital to the sustainability of the local agricultural industry as well as a large number of people whose livelihoods depend (directly or indirectly) on the continuous sale of local produce to regional, state, national and international markets. If for example, an incursion of an exotic insect such as Mediterranean Fruit Fly[25] *(ceratitis capitata)* was detected at a local mango property, the region would risk losing its Area Freedom status, which would mean the immediate cessation of all exports from the area until quarantine and regulatory agencies were satisfied that the contaminate had been contained and eradicated. Such actions could result in the potential cancellation of lucrative markets in both Australia and overseas, which would impact greatly on the livelihood and lifestyle of many people in the community. The biggest concern for local growers is that most incursions occur when local people, businesses (hotels, supermarkets, restaurants) and/or tourists bring contaminated food products into the region from outside, which subsequently infects local crops.

One of the principal aims of the local agricultural industry and associated government departments is to raise the profile of biosecurity in order to preserve the region's Area Freedom status. To do this, a number of strategies have been implemented to increase community awareness through the distribution of pamphlets, installation of road signage, publishing of newspapers articles, the monitoring of insect traps and interviews on regional radio. As well as this, government agencies maintain strict controls on the movement of plant material into the region, which is reinforced by quarantine checks at the airport and nearby state border while honesty bins enable tourists to dispose of fruit and vegetables purchased outside the local area.

However, even with these measures in place, local growers have suffered a number of biological incursions over the past ten years, which indicates that the concept of 'biosecurity' still remains relatively foreign to people in the town other than those associated with the agricultural industry. While local growers tend to be well informed about biosecurity, people in other sub-groups have limited awareness of biosecurity and the scale of biosecurity activity currently in place. Though many people, particularly those who have lived in the area for longer periods of time, acknowledge that there are some restrictions on for example, the movement of plant products into the region, they do not necessarily know why. This would indicate that even though there is some basic knowledge of biosecurity (instigated by others), this knowledge does not fully translate

[24] The district is free from many of the biological pests found in other growing areas of Australia, which means products grown in the region can be exported to other localities with out the application of strict quarantine restrictions

[25] or Medfly lays its eggs in ripening fruit, causing accelerated decomposition and making it unsuitable for sale as larvae in the fruit can be transported to other sites, hatch and contaminate those regions (Broughton, et.al, 2004).

into an understanding of why these initiatives are required or the consequences that may be felt by the community if an incursion was to occur. In other words, though there is some knowledge of biosecurity as a concept (albeit limited), there is minimal interest or motivation to convert this knowledge into community action.

Low levels of knowledge about biosecurity and the implications this may have for the broader community indicates a number of critical points. Firstly, that local people involved in agriculture are most likely to take up new knowledge and information about biosecurity because their livelihood and lifestyles are most at risk of a biological incursion. The loss of Area Freedom status would significantly impact on the income of local growers as national and international markets would no longer accept food products from the region if it was suspected to have biological contaminants. The fact that information is not readily taken up beyond the agricultural industry may suggest that local people view biosecurity with limited personal interest and, more importantly, believe it to be the responsibility of the agricultural industry and government agencies to address. Above all, it may be assumed that a biological incursion will bear little threat to the lifestyles of local people not engaged in agriculture. Considering that quality of life is one of the primary reasons why people choose to stay in the area longer than expected, it appears that very few have considered what effect an incursion may have on their immediate physical, social, economic or cultural environment let alone that of the broader community.

The plight of the cane toad

Keeping in mind the broader community's limited appreciation of biosecurity and the impact a biological incursion may have, it is interesting to view local people's approach to cane toads. With a main incursion front some 100km away, a great number of local people have invested considerable time, energy, skills and finances into two distinct community groups attempting to stop (or at least slow) the progress of the cane toad. Every weekend, groups of twenty to thirty volunteers drive the necessary two hours east to monitor and catch as many of the amphibians as possible.

'Toadbusting' has become successful as an eradication procedure. It has amassed a significant amount of physical and financial resources while developing specific links with Indigenous training programmes, young people in local schools and education displays in public venues. This initiative also maintains high involvement and participation with local businesses, the Shire council, state and commonwealth government departments, tourism, mining and agricultural industries, Indigenous groups and other residents all actively contributing to address this regional issue. However, when it comes to more immediate, invasive and costly biological pests such as the medfly, salvinia[26] *(salvina molesta)*, or silver leaf white fly[27] *(bemisia tabaci)*, local people seem

[26] One of Australia's worst aquatic weeds, salvina's invasive qualities have the ability to choke waterways and impact significantly on the environment and economies of communities (CRC AWM, 2003)

[27] One of the world's most invasive arthropods, silver leaf white fly damages crops by producing honeydew as it feeds, which causes mould to grow on leaves and contaminate fruit (CSIRO, 2007)

to show little interest even though the repercussions of such are far greater (and personal contributions much less) than that attributed to the cane toad.

So what is it about toadbusting that encourages local participation over and above other biosecurity initiatives? A long history in northern Australia and significant media attention, together with the fact that cane toads are relatively visible and easily recognisable, provides them with a very high profile. Toadbusting (as a biosecurity strategy) has also been presented as a family or collective activity that encourages people of all ages and from all walks of life to make an active contribution to protecting the environment. For example, individuals invite friends, families, neighbours and others within their social networks to participate in toadbusting activities which makes the event as much a social gathering as it does a biosecurity initiative. This appears to be one of the main differences between toadbusting and other biosecurity strategies in that cane toads (as well as being unattractive to look at) have been specifically identified as a threat to the habitat and livelihood of local land and aquatic animals, and thus the state of the local environment. Participating in or donating to a toadbusting event therefore becomes a personalised activity that encourages local residents to be actively involved in preserving the surrounding environment, which in effect, is 'giving something back' to their community.

Such a distinction seems to be an important factor in the success of the toadbusting strategy and suggests that local people recognise that the surrounding wetlands, floodplains, river systems and grasslands are relevant to their way of life. It would also appear that local people have made the link between an incursion of cane toads and the potential loss of the local environment, which would impact on the activities they enjoy in their leisure time. In other words, biosecurity has become a lot more personal as the impending cane toad incursion becomes a very real and visible threat to those recreational, social and lifestyle pursuits that are so central to living in the community. For example, the favourite fishing spot may no longer hold any fish, local swimming holes may lose their appeal when inundated with cane toads while camp sites may not be as attractive when the natural wildlife is missing.

Though biosecurity is recognised as a whole of community issue (ABCRC, 2003; Rohan, 2002; DAFWA, 2005), local people do not tend to play an active role in the surveillance of local areas and reporting of biological anomalies. Initial research suggests that local people have not made the same connection between a biological incursion as they have with the more tangible cane toad and the potential impact these may have on individual and communal livelihoods and lifestyles. It is expected that further research will explore this and other such challenges in greater detail and provide some indication as to what factors motivate local people to not only source and retain new knowledge but also actively participate and address local issues.

Synthesis

The town appears to maintain a solid sense of community and social capital, which is refected in the formation of social networks and close personal relations between local people. Though information flows readily within these networks, there is evidence to

suggest that new knowledge does not always cross from one population group to another particularly well, which tends to highlight a level of intentional and unintentional difference amongst specific sectors of the community. Indigenous people and Indigenous organisations most notably go unrecognised as do local Indigenous histories, culture, beliefs and knowledge of traditional lands. Similarly, but probably more discreetly, is the distinct manner in which groups access and share information from within their own networks. This in itself raises questions as to whether concepts of inclusivity specifically suppress or enhance the exchange of information and new knowledge, which is typically demonstrated in the area of biosecurity.

Even though there are considerable information and awareness strategies available, most knowledge and activity relating to biosecurity remains primarily with those people situated in the agricultural industry and associated government agencies. The fact that a number of biological incursions have occurred in the area reinforces the idea that the concept of biosecurity is still relatively foreign to a majority of local people. As such, the opportunity for a bipartisan and informal exchange of biosecurity information does not yet exist between the agricultural industry and other people living in and visiting the area.

As close networks and personal relationships tend to generate more effective means of gathering new knowledge, it would seem that greater attention may focus on providing more personal relationships between local people and biosecurity (and those agencies providing information about it). In other words, this relationship appears to be relatively limited with local biosecurity strategies seen more in isolation from community activities rather than being part of them. For example, the dissemination of biosecurity information relies primarily on formal methods of information exchange (such as pamphlets and reports) as opposed to public domains (agricultural shows, markets, the rodeo and shopping centres) where local people can gather to identify and develop relationships with local issues and meet those people (government or otherwise) involved in agriculture and biosecurity. As a result, greater attention may focus on the manner in which information is provided to local people rather than rely on the volume, content and availability of biosecurity material. It is expected that local people will not find interest and relevance in biosecurity regardless on how many brochures appear in their post office box. Local people may however, be more likely to gather new knowledge about biosecurity by engaging in meaningful conversations and participating in activities relevant to their own personal circumstance, which can bring about change in their attitude and their actions.

Conclusion

This paper provides an overview of the preliminary findings of a PhD research project in a northern Australian agricultural community, which aims to determine “How communities engage with new knowledge?” Concepts of community, social capital, informal learning and communities of practice support the data collected from six specific sub-groups and the manner in which information and new knowledge is exchanged using the principals of community engagement.

Three distinct themes have so far emerged from preliminary findings and recognise the importance of social networks, the value in developing strong linkages with others and that personal interest is a key factor in motivating local people to take up information as new knowledge. The close personal relationships that exist in the town provide a significant network of trust, partnership and reciprocity amongst local groups and the broader population, which is typified by a solid communal ethos of community participation. Though there are a number of different and specific means by which local people access and source information, it appears that communication resulting from social networks is the most effective for local people. However, evidence also suggests that local people are more likely to learn and take up new knowledge if information is of particular interest or specifically relevant to their livelihood or lifestyle.

This is especially highlighted in the area of biosecurity. As a region with Area Freedom status, significant resources have been invested in maintaining an agricultural area free from the biological pests found in other Australian growing districts. Though biosecurity information is readily available in many different mediums, it appears that people involved in agriculture are primarily interested in implementing proactive strategies to reduce the threat of a local incursion. Even though local people actively respond to the prospect of a cane toad incursion, very minimal interest has been attributed to addressing other more immediate and damaging biological pests. One of the reasons for this may lie in the fact that biosecurity has in the past, been associated with the agricultural industry and not viewed as a whole of community issue. To most, it seems that a biological incursion would impact on regional crop production and leave a limited impression on the personal lifestyles or livelihoods of the town's greater population. This would suggest that local people have not formed any personal or applicable relationship with biosecurity and are therefore reluctant to be engaged in such strategies other than those involving cane toads.

These results indicate a number of implications for the local area. One of the most obvious is that local people have not adopted an active view of biosecurity regardless of the information available in the community. Reasons for this are varied though most likely relate to the fact that the vast majority of biological threats are perceived to have limited relevance to local people. Cane toads are an exception primarily because they are an identifiable and tangible threat to the immediate and broader environment and thus, the lifestyle of local people. The challenge then for those in the agricultural industry (including associated government departments) as well as the broader community, is to create and adopt new forums of relevant information exchange that actively engage local people.

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